This listing of claims will replace all prior versions and listings of claims in this application:

a.) Listing of Claims

1. (original) An alignment process for a fiber optic system including at least one lens and a tunable filter element, the process comprising:

transmitting an optical signal into the system;

detecting a back-reflection from the lens and/or the tunable filter element;

manipulating a position of the lens relative to the tunable filter element in response to the back-reflection.

2. (original) An alignment process as claimed in claim 1, wherein the step of transmitting the optical signal into the system comprises transmitting the optical signal via a fiber pigtail of the system.

3. (original) An alignment process as claimed in claim 1, wherein the step of detecting the back-reflection comprises detecting an optical signal coupled into a fiber pigtail of the system from the system.

4. (original) An alignment process as claimed in claim 1, further comprising inserting a mirror optically between a first lens and a second lens in the fiber optic system.

5. (original) An alignment process as claimed in claim 4, further comprising transmitting an optical signal to the fiber optic system via a fiber pigtail while detecting back reflections from the mirror.

6. (original) An alignment process as claimed in claim 5, further comprising moving the first lens relative to an endface of the fiber in response to backward coupling of the optical signal into the fiber from the mirror.

7. (original) An alignment process as claimed in claim 6, further comprising translating a second lens in the optical train in response to a level of back reflections from the filter element with the mirror removed.

8. (original) An alignment process as claimed in claim 1, further comprising:
coating the filter to be reflective at a predetermined wavelength; and
tuning the optical signal to the predetermined wavelength.

9. (currently amended) An alignment process as claimed in claim 1, further comprising:
optically inserting a camera into an optical link of the optical system;
generating an image of the lens, and
translating the lens relative to the optical system in response to the image. ~~image.~~

10. (original) An alignment process as claimed in claim 9, further comprising:
removing the imaging device from the optical path; and
inserting the fiber pigtail into the optical system.

11. (original) An alignment process as claimed in claim 10, further comprising:
exciting the optical train with a signal via the optical fiber;
detecting a ratio between two optical modes in a backreflection signal from the optical system.

12. (cancelled)

13. (currently amended) An alignment system ~~as claimed in claim 12~~, for an optical system comprising a lens and a tunable filter element, the alignment system comprising:
an optical signal source;
an optical signal detector for detecting back-reflections from the optical system;
a reflective element in the optical system that produces the back-reflections;

a manipulation system for moving the lens and tunable filter element relative to each other in response to the back-reflections, and

wherein the optical signal source that emits radiation at a frequency not coinciding with a resonant peak of the tunable filter element.

14. (currently amended) An alignment system ~~as claimed in claim 12,~~ for an optical system comprising a lens and a tunable filter element, the alignment system comprising:

an optical signal source;

an optical signal detector for detecting back-reflections from the optical system;

a reflective element in the optical system that produces the back-reflections;

a manipulation system for moving the lens and tunable filter element relative to each other in response to the back-reflections; and

wherein the reflective element is insertable such that it is orthogonal to an axis of the optical system.

15. (cancelled)

16. (cancelled)

17. (cancelled)

18. (cancelled)

19. (cancelled)

20. (currently amended) An alignment process ~~as claimed in claim 16, further comprising:~~ for a fiber optic system including at least one lens and a tunable filter element, the process comprising:

transmitting an optical signal into the system;

optically inserting a camera into an optical link of the optical system;

generating an image of the lens;

translating the lens relative to optical system in response to the image;

exciting the optical train with a signal via an optical fiber;

detecting a ratio between two optical modes in a signal from the optical system; and

aligning the system to minimize the ratio.

21. (previously presented) An alignment process for a fiber optic system including at least two lenses and a tunable filter element, the process comprising:

transmitting an optical signal into the system;

optically inserting a camera into an optical link of the optical system;

generating an image of a first lens,

translating optical elements of the fiber optic system in response to the image of the first lens;

generating an image of a second lens, and

translating optical elements of the fiber optic system in response to the image of the second lens.

22. (original) An alignment process as claimed in claim 21, wherein the step of transmitting the optical signal into the system comprises transmitting the optical signal backwards through the optical system.

23. (original) An alignment process as claimed in claim 21, wherein the optical signal is tuned to a passband of the tunable filter.

24. (original) An alignment process as claimed in claim 21, further comprising:

removing the camera from the optical path; and

inserting the fiber pigtail into the optical system.

25. (previously presented) An alignment process as claimed in claim 21, further comprising:

exciting the optical train with a signal via an optical fiber;

detecting a ratio between two optical modes in a signal from the optical system; and

aligning the system to minimize the ratio.

26. (cancelled)

27. (currently amended) An alignment process for a tunable filter optical train of a fiber optic system, the process comprising:

transmitting an optical signal into the optical train, which comprises an optical fiber, a lens, and a MEMS tunable filter that are attached to a bench;

detecting the optical signal after transmission through at least part of the optical train; and

moving the lens, the MEMS tunable filter, and/or an endface of the optical fiber of the optical train in response to the detected optical signal to improve an alignment of the optical train;

detecting a ratio between two optical modes of the tunable filter.

28. (previously presented) An alignment process as claimed in claim 27, wherein the step of detecting the optical signal comprises detecting a back-reflection from the MEMS tunable filter.

29. (previously presented) An alignment process as claimed in claim 27, wherein the step of detecting the optical signal comprises detecting the optical signal after transmission through the tunable filter.

30. (previously presented) An alignment process as claimed in claim 27, wherein the step of transmitting the optical signal into the optical train comprises transmitting the optical signal via the optical fiber endface.

31. (previously presented) An alignment process as claimed in claim 27, further comprising inserting a mirror optically into the optical train.

32. (previously presented) An alignment process as claimed in claim 31, further comprising transmitting an optical signal into the optical train via the optical fiber endface while detecting back reflections from the mirror.

33. (previously presented) An alignment process as claimed in claim 27, further comprising translating a second lens in the optical train relative to the bench in response to the detected optical signal.

34. (previously presented) An alignment process as claimed in claim 27, further comprising:

coating the filter to be reflective at a predetermined wavelength; and

tuning the optical signal to the predetermined wavelength.

35. (previously presented) An alignment process as claimed in claim 27, wherein the step of detecting the optical signal comprises detecting the optical signal after transmission through the tunable filter.

36. (cancelled)

37. (currently amended) A fiber optic alignment system for an optical train comprising at least a lens and a tunable filter, the system comprising:

an optical signal source;

an optical signal detector for detecting the optical signal after transmission through at least part of the optical train; and

a manipulation system for moving the lens and the tunable filter in response to the optical signal detector;

wherein the optical signal source that emits radiation at a frequency not coinciding with a resonant peak of the tunable filter element.

38. (previously presented) An alignment system as claimed in claim 37, further comprising a reflective element in an optical link that produces back-reflections that are detected by the optical signal detector.

39. (previously presented) An alignment system as claimed in claim 38, wherein the reflective element is insertable such that it is orthogonal to an axis of an optical path of the optical system.

40. (cancelled)

41. (previously presented) An alignment system as claimed in claim 37, wherein the optical signal detector comprises a camera for detecting the optical signal.

42. (previously presented) An alignment system as claimed in claim 37, wherein a camera generates an image of the lens.

43. (previously presented) An alignment system as claimed in claim 37, wherein the optical signal source generates an optical signal that covers a passband of the tunable filter.

44. (previously presented) An alignment system as claimed in claim 37, wherein the manipulation system moves a second lens of the optical train relative to the lens and the tunable filter in response to the detected optical signal.

45. (previously presented) An alignment system as claimed in claim 37, wherein the optical signal source transmits the optical signal backwards though the optical train.

46. (previously presented) An alignment system as claimed in claim 37, wherein the optical signal is transmitted though an endface of the fiber between the optical signal source and the optical signal detector.

47. (previously presented) An alignment system as claimed in claim 37, wherein the manipulation system moves the lens and tunable filter relative to each other in response to a spectral response of the tunable filter.